Additional Imputations of Employer Information for the Medical Expenditure Panel Survey Insurance Component Since 1996

Background

This report is the second report containing information on imputation of variables for the Medical Expenditure Panel Survey (MEPS) Insurance Component (IC). The MEPS-IC is a survey of employers, both private industry and public, that collects information on employer sponsored health insurance. The survey is sponsored by the Agency for Healthcare Research and Quality and conducted by the U.S. Bureau of the Census. It is designed to collect information on employment related health insurance, such as, premiums and types of plans offered. Information that describes characteristics of the employer is also collected. This data is used to classify employers for calculations of averages and totals and to serve as independent variables for economic modeling.

The sample design of the IC is described in Sommers, 1999. Imputation of missing data for 1996 is described in Sommers, 2000a. These documents reflect the survey as of the 1996 survey year. Since that time, sample from unions and insurers of respondents to the MEPS, Household Component (HC) have been dropped from the sample due to the low response rates. The sample of self employed individuals with no employees (SENE's) has also been dropped from the due to a combination of factors. The major reasons were low response rates and the fact that many self employed did not have insurance as self employed individuals, instead they obtained insurance through another employer or through their spouse's employment. Because the employers providing the insurance in these cases are covered through the main sample of employers, this further limited the number of sample persons with usable data. Combined with the low response rates, this caused the sample of SENE's to be of marginal value and it was dropped.

Since that first survey for the year, 1996, the list of variables imputed with the data have been expanded, significantly. Some of these are variables that were not originally collected, however, most are additions to the list that were collected for the 1996 survey year but not imputed. A copy of the standard 1999 IC data collection forms for establishments and plans are included as Appendixes A and B at the end of this document.

Because the imputations being described are an expansion of the previous list, and the basic technical methods are very similar, this paper will not give the level of detail of Sommers, 2000a.

This paper also assumes that the previous imputations described have been completed before the imputations described here take place. Due to these reasons, for the reader to have the clearest picture of the process, they are advised to be familiar with the previous work described in Sommers, 2000a.

General Technical Methods

The original imputation methods report described the process for 7 groups of variables. Variables were grouped based on natural relationships. For instance, questions relating to whether an employer offered health insurance to retirees and whether they offered

insurance to retirees below age 65, above or both were done together. Likewise, the variables were ordered to maintain consistency. For instance, type of plan providers was imputed before premiums because premiums are influenced by type of plan providers (Sommers, 2000a).

The basic methods used to produce the additional new imputed results were similar to those used in developing the processes for the first seven sets of imputation. They are grouped and continue in order with later groups built using previous imputations if required. The new groups are numbered from 8 to 17. As before each group generally goes through 3 phases to produce imputed results:

- Data preparation Data editing is completed and data is normalized, for example, all premium values are annualized.
- Donors are selected for each recipient needing a value. Generally this is done using a hot deck method which is similar for all groups. Specifics behind the hot-deck process can be found in Kalton and Kasprzyk (1986) and are based upon the premise that the expected values of two items is the same if both items agree on a set of important predictive characteristics. The method used to implement this technique was developed by Stiller and Dazell (1997). It depends on sorting the donors and recipients. As part of the process class and sort variables are developed and ordered. A donor and recipient must have the same class variables. If donors and recipients disagreed on any class variable then their expected difference in values have been determined to be too large. differ on the sort variables, which have less effect on expected values than class variables. Efforts are made to match on sort variables also, but these are ordered so that if not all variables are matched the least important are dropped first in the matching process. (A more extensive description of this process is given in Sommers, 2000a.)
- Final required values are produced. Many times there is a direct substitution of one or more donor values into the recipient's slots for the same variables. However, some of the recipient values are determined by using ratios or other values derived from the donor and applying them to a current recipient value. This is done to maintain consistency among the recipient results. For instance, to obtain the number of employees eligible for health insurance, the donor ratio of eligible to total employees is applied to the number of employees of the recipient. This maintains data relationships. If a direct substitution of the donor's eligible employees were used, either the process would need to be limited to donors with very similar values of total employees to the value of the recipient. Otherwise, the recipient values would likely have an expected value that was too high or too low dependent upon the relationship of the employment of the recipient to the average employment of the set of donors.

Process for Each Group of Variables

In the next sections of the report, we proceed through each of the new groups of variables that were imputed for the MEPS - IC. For each group, we give the list of variables to be imputed with reference to their questionnaire name (establishment or plan) and question number (Copies of the standard establishment and plan questionnaires are given in Appendices A and B.). We also describe sort variables used in the selection of all donors for the individual variables within the group, describe class variables used for imputation for all individual variables within the group and describe the step by step process used to create values for each type of recipient from the donor information. Sort and class variables are given for imputation of private sector data. Changes made for imputation of government data are given in the last section of this report. Precise definitions of required class and sort variables are given in Appendix C.

We assume that all logical edits have been performed before the imputation takes places. Thus, for instance, if a respondent gave a total number of part time employees in question D1b as zero and did not fill in how many were eligible or enrolled, these values would automatically be set to zero. Because of this assumption we do not discuss logical edits in process descriptions unless this information adds to the discussion of the process.

Throughout the process, we assume a standard definition of a responding establishment and responding plan. An establishment was considered a respondent if it answered that it did or did not provide insurance for its employees and if the establishment did provide insurance for some of its employees, the establishment also responded at the plan level for at least one of its plans. Responding plans are defined as those that had information provided for at least one of the following items on the plan questionnaire (Appendix B) for the specific plan:

- Type of providers, question 2
- Gatekeeper required, question 3
- Purchased or self insured, question 4
- Plan active enrollment, question 7a
- Premium levels and contributions, questions 8 and 9.

In the following sections, we describe the imputations of variables in the new groups 8 through 17. As was done in the previous methods report (Sommers, 2000a), we give (1) the variables imputed in the groups, (2) the sort variables, in order of importance from most to least important, and (3) the class variables. Along with these lists, we give the processes used to convert data from the donor to create the recipient values.

Eighth Group of Variables

Plan questionnaire (Pq) 6c Establishment questionnaire (Eq) E1 Annual plan cost for self insured plans. Total annual cost of coverage for all hospitalization/physician plans at the location.

Sort Variables

None, hot deck process not used.

Class Variables

None

Process

To impute these values does not require the selection of any other donors. At this time all enrollments and premiums for each plan have been imputed in earlier imputation groups. Using the assumption that the plan premium and enrollments are the same for the entire year at the establishment, then the total annual cost for a plan is the number of single enrollees multiplied by the annual single premium plus the number of married enrollees multiplied by the annual married premium. Using this method directly gives an estimate of total annual plan cost for a self insured plan. The weighted sum of these estimates by plan for the set of plans collected for the establishment gives an estimate of the total annual cost at the location for hospitalization/physician plans. The weight used is the conditional plan weight within the establishment given the establishment is in the survey.

Ninth Group of Variables

Eq E8a	Retirees in the firm covered by insurance.
Eq E8b	Retirees in the firm with single coverage.
Eq E9a	Retiree single coverage premium.
Eq E9b	Retiree single coverage employer contribution.
Eq E10a	Retiree family coverage premium.
Eq E10b	Retiree family coverage employer contribution.

(Note these questions do not apply to the establishment in the sample. They apply to the firm which controls the establishment. This is done because retiree data are not available at the establishment level and actually cannot always be related to a specific operating establishment. For instance, retirees within a firm that worked at a closed factory cannot be associated with a particular operating establishment. Thus, retiree questions are for the firm and require special estimation processes to be used in making estimates. For more information, see Sommers, 2000b.)

Sort Variables

A different donor is selected for each recipient. A different set of sort variables is used for the hot deck for each variable imputed. This reflects the differing sets of predictors for each value. The variables listed have been placed in the same group because they are all questions concerning retiree coverage and imputation of some of these variables requires use of one of the previously imputed variables.

For retirees covered by insurance and retirees with single coverage, the sort variables are (1) whether the establishment offers health insurance to retirees under 65, (2) whether the firm offers health insurance to retirees over 65, (3) the industry division group, (4) the industry division, (5) Firm Age Group 2, and (6) Firm Size Class 2. (See Appendix C for variable definitions.)

For retiree single coverage premium the sort variables are (1) industry division group, (2) industry division, (3) Firm Size Class 2, (4) Firm Size Class 1, (5) Census division, (6) State, and (7) the size of the retiree family coverage premium.

For retiree single coverage employer contribution the sort variables are (1) industry division group,(2) industry division,(3) Firm Size Class 2, (4) Firm Size Class 1, (5) Census division, and (6) State.

For retiree married coverage premium the sort variables are (1) industry division group, (2) industry division, (3) Firm Size Class 2, (4) Firm Size Class 1, (5) Census division, (6) State, and (7) the size of the retiree single coverage premium.

For retiree married coverage employer contribution the sort variables are (1) industry division group, (2) industry division, (3) Firm Size Class 2, (4) Firm Size Class 1, (5) Census division, and (6) State.

Class Variables

The class variables for all the hot deck imputations in this group are Firm Size Class 3 and whether the establishment offered health insurance to retirees.

Process

The values of the retiree single coverage and retiree married coverage premiums are taken directly from the donor establishment. The other four variables are obtained by multiplying a ratio calculated from the donor times a value take from the recipient. The total number of retirees for the firm is the number of employees for the firm of the recipient multiplied by ratio of the number of retirees from the donor establishment's firm over the total employment of the donor establishment's firm.

The total single enrollees is the total enrollment for the recipient multiplied by ratio of the total single enrollment for the donor's firm over the total enrollment for the donor's firm.

Each of the two contributions is calculated by multiplying the corresponding (family or single) premium for the recipient by the ratio of the donor plan's corresponding employer contribution over the donor plan's corresponding premium.

Tenth Group of Variables

Eq E2a Optional coverages offered. Eq E2b Total cost of optional coverage.

Sort Variables

The two variables are imputed in sequence, but the second value, does not use a hot deck routine and no sort values are used. For the first, variable, 'optional coverages offered', the file is sorted by industry division and Firm Size Class 1.

Class Variables

The variable Firm Size Class 2 is used as a class variable for imputation of the first variable.

Process

The first question if not answered is imputed directly from a donor who provided a response. A donor is an establishment that either checked that they did not offer any optional coverage or checked one or more of the optional coverages listed. A recipient is an establishment that either checked no box or checked that they did not offer coverage and then checked a coverage that was offered.

The total cost of optional coverage for an establishment for those establishments which offered this coverage, whether actual or imputed, which did not report a cost had their costs imputed by applying a factor to their total number of employees enrolled in health insurance.

The factors are derived from the costs of those establishments which reported both the coverages offered and their total costs. Each establishment could offer from 1 to 4 coverages. The reporting establishments are grouped by whether they offer 1, 2, 3 or 4 optional coverages. The weighted sum of the reported optional coverage costs for each group is calculated and divided by the weighted total of their enrolled to obtain a ratio of cost per enrollee for those establishments offering that number of optional coverages.

For each recipient, its total costs are determined by multiplying the establishment enrollment by the appropriate factor for the establishment based upon the number of coverages offered by the establishment. i.e., if the establishment offers two optional coverages its total cost is its enrollment times the average reported cost per enrollee for establishments which reported offering two optional coverages.

Eleventh Group of Variables

Pq 8c How many former employees are enrolled in plan?

Sort Variables

None, hot deck process not used.

Class Variables

Firm Size Class 2 and industry division group

Process

For each cell determined by the two class variables, the weighted sum for reported plans of the number of former employees enrolled was divided by the weighted sum of active enrollees for the reported plans within the same cell. To impute the number of former employees enrolled for a recipient plan, that plan's total enrollment was multiplied by the ratio calculated from reporting donor plans in the same cell.

Twelfth Group of Variables

Pq 13a	Did plan have a deductible?
Pq 13b	What was annual individual deductible?
Pq 14a	Did the plan require a specific number of individual deductibles be met before the family deductible is met?
Pq 14b	How many family members were required to meet the individual deductible?
Pq 14c	What was the total annual family deducible?
Pq 15a	Was hospital care covered?
Pq 15b	How much and/or what percentage was paid by enrollee for
	hospital care?
Pq 15c	Is physician care covered?
Pq 15d	How much or what percentage was paid by enrollee for physician care?

Sort Variables

The imputation is done in sequence with four hot deck steps. The variables are imputed in the following order:

- Did the plan have a deductible?
- Was the family deductible a multiple of the single deductible?
- Did the plan have hospital coverage and did the plan have physician coverage?
- The remaining variables in the list.

For the first two hot deck runs, the files are sorted by (1) Firm Size Class 2, (2) state, and (3) size of the single premium. For the remaining two runs the files are sorted by (1) Firm Size Class 2, (2) type of provider, (3) State, and (3) size of plan single premium.

Class Variables

The class variable for whether the plan had a deductible is the type of provider. There are no class variables for the second and third hot deck runs. The class variables for the fourth hot deck run are did the plan have a deductible and was the family deductible a multiple of the single deductible.

Process

The variables are related because each set relies on information from the previous imputation either to determine if there needs to be an imputation at that point or to determine a class variable for the next imputation. For instance, we must know if there is a deductible from the first imputation in order to know if there needs to be an imputation for the family deductible. The variables from the first three imputations are needed to determine the structure of the imputation results for the large number of variables imputed in the fourth hot deck. The process approach is given below.

Due to the close interaction of the variables in this group, an important first step is taken using a large number of logical edits. For instance, if a plan has deductibles reported, then it is assumed that the plan had deductibles. If copays are given for physician visits, then it is assumed that physician care was covered. Once these edits have been carried out, then the imputation steps are done in a sequence that builds the information in a logical correlated manner.

The first step is to determine if there was a deductible. A recipient in this group would not have information about whether the plan had a deductible and likely would also not have any information about most of the other variables in this overall group. They would certainly not have any information on the type of family deducible imputed in the second hot deck process nor the levels of the various deductibles in the fourth hot deck group above.

In this first step, a donor is a plan that had reported whether there was a plan deductible. The value of the donor is directly imputed into the recipient value to determine if the recipient had a deductible.

The donors for the second set are those plans which have a deductible and information on the structure of the family deducible. Recipients lack information on the nature of the family deductible but were known to have had a deductible. As with the first hot deck step, the donor value is directly imputed into the recipient value.

The third hot deck determines if plans offered physician coverage and/or hospitalization coverage. These two values are determined at this stage of the imputation process

because most of the remaining variables in the imputation group are related to one of these types of care. For instance, hospital copays must be determined, but before one can determine if there is a hospital copay, one must know if there is hospital coverage. If there is no coverage there is no copay.

For this third hot deck run, the donor plans are all those plans who answered both the questions about type of coverage offered. Recipient plans are those plans which failed to report if the plan covered either hospital coverage, physician coverage or both. The donor value is directly imputed into the recipient value if the recipient needs such a value. For instance, if the recipient plan was reported to have hospitalization coverage, but failed to report about physician coverage, then only the donor's value about physician coverage would be used.

For the fourth hot deck, donors are plans which have all the information for all the items in the group that would be required (For instance, if the plan had no deductible its deductibles could be blank.) and that offered family coverage, physician coverage and hospitalization coverage. Recipients are plans for which it is known whether they have a deductible, which types of coverage are included, and whether a family deductible is a multiple of the single deductible. However, necessary details in these areas are not known. For instance, if the plan had a deductible, not all required deductible values are known. If the plan had hospitalization coverage, then it is not known what the copays/percentage paid by the enrollee were.

There is only one donor per recipient. Donors have information for all the possible fields to be imputed. This means s donor is sometimes required to have more than the minimum information required to choose a donor or to provide values for the recipient. For instance, all donors have values for physician copays, but the recipient may not require a physician copay because the plan does not have physician coverage or the recipient plan has had this copay reported. Likewise, the recipient plan may not offer family coverage and thus not require a family deductible but the donor plan, if it has a deductible, would have family deductibles in case they were needed for the imputation. This completeness and use of the two variables, whether the plan has a deductible and the type of married deductible, assure that the donor plan will have all the information required for any recipient plan in the class. This donor specification was used because (1) almost all reporting plans had the two types of coverage and married coverage and (2) if any information was given complete information was given. Thus (1) very few donors are removed from the imputation by the restriction leaving a large supply of donors, (2) it allows the imputation to be carried out using a simpler process with fewer steps by selecting a single donor for all these variables and then using only the needed information, (3) it helps maintain correlation and consistency of data by using the same donor and (4) matches of donor and recipient are still made using the most important prediction variables.

What information is used from the donor and how it is used to provide information for the recipient depends upon the pattern of reported information the recipient plan has. The process is such that a determination is made as to which sections of the recipient plan are missing information, then the process considers each section and the pattern of missing information within that section.

The process handles the remaining items in three parts, all of the deductibles are processed together as a group, the hospital copay/percent paid and the physician copay/percent paid are each handled a separate groups independent of the other and the deductibles.

The process for the deductibles requires that donor relationships be maintained when imputing values to the recipient using donor ratios of family to single deductibles. How each item is calculated depends upon what values have been reported for the donor and recipient. One must also remember that at this point in the process one knows whether the family deductible is a value or a multiple of the single deductible for both the donor and the recipient. Since these variables are class variables in this imputation, the donor and recipient share this characteristic. One also knows whether both the donor and recipient have a deductible. Again, this is because this is a class variable in the process. One also has if necessary imputed what type of coverages the recipient provides so one knows if one requires a married deductible or hospitalization deductible or physician deductible. On the other hand the donor always has each of these three types of coverage and thus can provide for all three types of coverage within its class even if the recipient does not need all three.

Data from donors are used in a way to both retain relationships of the data within the donor and at the same time retain any recipient information available. What is done depends upon the case and what the donor and recipient deductible information is. Some of the key cases, are as follows:

- If the recipient has no deductible, then the deductibles are left empty.
- If the recipient has a deductible and is missing all deductible values, the donor values are simply imputed to the recipient.
- If the recipient requires a family deductible but has a single deductible one gets the family deductible by multiplying the reported recipient single deductible by the ratio of family to total single deductible of the donor. If the recipient has a family but no single deductible, the process is reversed and the recipient family deductible is divided by the donor ratio to obtain the single deductible.
- To preserve whether there is a single individual deductible or separate deductibles for hospital and physician care, if a single deductible is calculated for the recipient using a donor ratio of total single deductible, and the donor has separate deductibles then the total recipient value is prorated into separate deductibles using donor values. For instance, if the recipient reported no single deductible but a family deducible of 200, and the donor had a family deductible of 300 and two separate individual deductions of 75, then the total single deductible for the recipient would be 100 = 200*(75 + 75)/300. The 100 would then be prorated to

50 and 50 using the portions 75 and 75 from the donor to allocate the 100 between the two individual deductibles.

- For cases where the donor and recipient both have family deductibles which are multiples of their single deductions, if the recipient does not have a single deductible, family deducible nor has the number of single deductibles required for the family deductible, then all donor values are imputed to the recipient. However, if the recipient has no single deductible but has a number of times the single deductible is required for family coverage, then only the recipient single deductible is taken from the donor. As above, if the single deductible of the donor is broken into two separate deductibles, then this pattern would be imputed to the recipient.
- Only required values are imputed. For instance, if a recipient plan has no family coverage, then no family deductibles are taken from the donor. Thus if a recipient was missing all values of deductibles but from earlier work, one knew that no family coverage was offered, then the family deductible from the donor would not be used for this recipient.

The imputation of copays/percent paid are basically direct transfer of values from the donor. Donors for the hospitalization copays/percents had a reported value for either the copay or the percent. It was assumed that if one were reported and the other value missing that the other value was zero. It was also assumed that if a plan had reported an amount paid that it was per stay unless the donor reported otherwise. Recipients for hospitalization copays/percents had both the hospital values missing, but offered hospital coverage. The recipient takes from the donor plan the values of all three variables in the set.

For physician copays/percents, the same assumptions and edits were made as for hospitalization values. Thus, for physician copay/percents, a recipient plan was a plan with physician coverage and no copay or percentage reported, a donor plan had at least one of the two values reported. As with hospitalization, the recipient values were taken directly from the donor.

Thirteenth Group of Variables

Pq 17a	Did the plan have a maximum out-of-pocket for an individual and if so how much?	
Sort Variables		

State

Class Variables

Type of provider, Pq 2

Process

The two variables in question Pq 17a are related. Only one of the two should be answered. Donors are those plans with valid responses to the question, that is, either they had no maximum or there was a maximum given. Recipients are those plans that had neither of the two questions answered or both.

Imputation from donor to recipient is by direct substitution of donor to recipient value.

Fourteenth Group of Variable

Pq 17b Did the plan have a maximum out-of-pocket for a family and if so how much?

Sort Variables

State

Class Variables

Type of provider, Pq 2

Process

The two variables are related. Only one of the two should be answered. Donors are those plans with valid responses to the question, that is, either they had no maximum or there was a maximum given. Recipients are those plans that had neither of the two questions or both.

Imputation from donor to recipient is by direct substitution of donor to recipient value.

Fifteenth Group of Variables

Pq 21 Does plan offer routine outpatient prescription coverage, ... dental

care, ...orthodontic care (Only these three types of coverage are

imputed)?

Sort Variables

State

Class Variables

Type of provider, Pq 2 Process

Donors are those plans which have answered either yes or no to all three of these items. Recipients are those plans without a yes or no answer to all three items. To impute, there is a direct transfer of the donor value for any or all of the three items which are not reported on the recipient plans.

Sixteenth Group of Variables

Eq E3a Did the establishment require a waiting period before a new

employee could be covered by health insurance?

Eq E3b If a waiting period was required, for 1999, how long was the

typical waiting period?

Sort Variables

Firm age group, industry division group, SIC2, Firm Size Class 1, State, and establishment size class.

Class Variables

None

<u>Process</u>

The process requires two hot deck imputations. Only establishments which offer health insurance are considered. The donor set for the first hot deck is all establishments which reported whether or not they had a waiting period for health insurance. The recipient set is all establishments which failed to answer whether they required a waiting period for health insurance. Imputation of the recipient value is by direct substitution of the donor value.

The donor set for the second imputation is the set of all establishments which require a waiting period for health insurance for their employees and reported the length of that period. Recipients are those establishments which either reported or had imputed that they had a waiting period for their employees before health insurance coverage began, but failed to report the length of that waiting period. The recipient value of the waiting period length is set equal to the value of the donor's waiting period.

Seventeenth Group of Variables

Pq 18a Could the plan have refused to cover persons with certain pre-

existing conditions?

Pq 18b Did this happen in 1999?

Pq 19 Did the plan have a policy requiring a waiting period before

covering a pre-existing condition?

Sort Variables

Census division, state, Firm Size Class 2, and establishment employment

Class Variables

Type of provider, Pq 3

Process

The process is completed in three steps. First, all plans which were missing an answer about whether a person could have been refused coverage for a pre-existing condition are recipients. Donors have a reported value for the question. Imputation of a value is direct placement of the donor value into the recipient value.

Plans which could deny coverage due to pre-existing conditions but did not indicate if this had happened were recipients for the second value. Donor plans reported if someone had been denied coverage for a condition. Again imputation was to directly copy the donor value to the recipient.

The third imputation was similar to the first two. Donor plans had a reported value for the question, recipient plans did not. Imputation was by direct transfer of the donor value to the recipient.

Government Imputation Process

The imputation process for sampled governments imputes the same data items as the private sector establishments. The process is similar to that of the private sector. The only differences are sort and class variables used. For government case imputation, the same sort variables are used for all data Groups. These are, in sort order, region, state and government employment size. For government cases there are no class variables that describe the government. Class variables used are only the specialized variables for plans which apply to that particular imputation group. Thus, for instance, for Group 11, for the private sector, Firm Size Class 2 and industry division class are class variables. For government case imputation, both would be dropped. For the various imputations in Group 12, the variables type of provider, did the plan have a deductible, and was the family deductible a multiple of the single deductible are class variables and are kept for government imputation. The size and industry division variables in Group 11 are dropped because they would describe the government and this type varable is not used.

For the Group 12 imputation the three variables are kept because they are characteristics of the plan and these variables were used.

References

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Appendix A. Establishment Questionnaire

1999 Medical Expenditure Panel Survey Insurance Component

HEALTH INSURANCE COST STUDY Establishment Questionnaire

(Please correct any errors in name, address, and ZIP Code. Enter number and street if not shown.)

U.S. DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. CENSUS BUREAU
ACTING AS COLLECTING AGENT FOR
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
AGENCY FOR HEALTHCARE RESEARCH AND QUALITY

RETURN TO

U.S. Census Bureau 1201 East 10th Street Jeffersonville, IN 47132-0001

PLEASE RETURN ENTIRE PACKAGE WITHIN

PLEASE DO NOT REMOVE COVER

INSTRUCTIONS

- **1.** Please report for the establishment identified on the cover sheet, unless otherwise specified.
- 2. Please report data for 1999.
- 3. Estimates are acceptable.
- **4.** Refer to the Definition Sheet included with this package for explanation of unfamiliar terms.
- **5.** If you have any questions or need assistance in completing the questionnaire, please call

Paperwork Reduction Act and Burden Statements

We expect that it will take 45 minutes, on average, per establishment, to complete the basic questionnaire. Establishments with more than one health plan will take an additional 10 minutes per plan, on average, up to the maximum of four plans to be reported. In addition, we estimate that it will take 15 minutes to review the instructions and locate the requested information. You may send any comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing burden, to the following address: Director, Center for Cost and Financing Studies, Paperwork Reduction Project 0935-0110, Agency for Healthcare Research and Quality, Executive Office Center, Suite 500, 2101 East Jefferson Street, Rockville, MD 20852-4908.

	Section A – NUI	MBER OF PLANS
1a	Please respond for the location identified on the cover sheet Respond for active employees only. Did your organization make available or contribute to the cost of any health insurance plans for its employees in 1999? For this survey, a health insurance plan is hospital and/or physician coverage made available to employees.	unless otherwise specified. 1 001 1 Yes – Continue with Question 1b 2 No – SKIP to Section B
b	 How many different health insurance choices did your organization make available or contribute to for its employees during the 1999 plan year? Do not count single service plans (optional plans) such as dental or vision. Plans offered by the same insurance company which offer: Single and family plans providing the same level of benefits count as one plan. High and standard options count as two plans. An HMO and a conventional plan count as two plans. 	SKIP to Page 4, Section C
	Section B – HEALTH INS	URANCE NOT OFFERED
1a.	Complete only if health insurance was NOT offered during 1999, otherwise; SKIP to Page 4, Section C. Did your organization offer any health insurance as a benefit to its employees at this location between January 1, 1994 and December 31, 1998?	031 1 ☐ Yes – Continue with Question 1b 2 ☐ No – SKIP to Question 2
b.	What was the last year your organization offered health insurance coverage to its employees at this location?	1 9 9 Last year offered
2.	In 1999, did your organization pay the medical or hospital bills of its employees directly, other than for workers' compensation and/or injuries suffered on the job?	⁰⁴⁹ 1 ☐ Yes 2 ☐ No
За.	Instead of providing a health plan in 1999, did your organization provide a voucher or stipend to its employees which could be used to purchase health insurance?	1 ☐ Yes – Continue with Question 3b 2 ☐ No – SKIP to Page 4, Section C
b.	Was this voucher or stipend to be used exclusively for health insurance or health care?	046 1 ☐ Yes 2 ☐ No
C.	What was the average value PER EMPLOYEE of this voucher or stipend at this location?	\$, . 0 0 Voucher value
d.	How frequently was this voucher or stipend paid? Mark (X) only one.	1 Weekly 2 Every 2 weeks 3 Monthly 5 Quarterly 4 Yearly Continue with Page 4, Section C

FORM MEPS-10 (5-24-2000) 20

	Section C – EMPLOYME	NT C	HARACTERISTICS
1.	Estimates are acceptable for all employment, eligibility, and enrollment figures. Include officers, owners, part-time, temporary and seasonal employees. Exclude leased or contract workers. What was the total number of employees your organization had at ALL locations for a typical pay period in 1999?	034	Employees at all locations
2a.	Complete questions 2–7 for the location listed on the cover sheet. How many employees were on your organization's payroll AT THIS LOCATION for a typical pay period in 1999?	200	All employees at this location If your organization did not offer health insurance in 1999, SKIP to Question 3a.
b.	How many of these employees were eligible for at least one health plan through your organization?	201	Eligible employees
C.	How many of these employees were enrolled in any health plan through your organization?	202	Enrolled employees
3a.	For the same typical pay period in 1999, how many of the employees reported in C2a worked part-time?	203	Part-time employees If your organization did not offer health insurance in 1999, SKIP to Question 4a.
b.	How many of these part-time employees were eligible for at least one health plan through your organization?	204	Eligible part-time employees
C.	How many of these part-time employees were enrolled in any health plan through your organization?	205	Enrolled part-time employees
4a.	For the same typical pay period in 1999, how many of the employees reported in C2a were temporary or seasonal employees?	206	Temporary or seasonal employees If your organization did not offer health insurance in 1999, SKIP to Question 5.
b.	How many of these temporary or seasonal employees were eligible for at least one health plan through your organization?	207	Eligible temporary or seasonal employees
C.	How many of these temporary or seasonal employees were enrolled in any health plan through your organization?	208	Enrolled temporary or seasonal employees
5.	Is the information you provided in questions 2, 3, and 4 above for the location listed on the cover sheet OR did you provide information for multiple locations?	550	1 ☐ Information for specified location 2 ☐ Information for multiple locations
FORM MER	² S-10 (5-24-2000)	.1	

	Section C – EMPLOYMENT CH	CHARACTERISTICS - Continued
	Provide information for a typical pay period in 1999. Estimates are acceptable.	
6a.	The following workforce characteristics are used to group similar organizations together for analytical purposes. What percentage of the employees at this location were women?	Women employees
b.	What percentage of the employees at this location were 50 years old or older?	Employees 50 years old or older
C.	What percentage of the employees at this location were union members?	Union members
d.	For the employees at this location in 1999, approximately what percentage earned –	1 022 % Earned less than \$6.50 per hour
	Less than \$6.50 per hour?	Earned between \$6.50 and \$15.00 per hour
	More than \$15.00 per hour?	Earned more than \$15.00 per hour
7.	How many hours per week must an employee work to be considered full-time at this location?	Hours Continue with Page 6, Section D

FORM MEPS-10 (5-24-2000) 22

Section D - BUSINESS CHARACTERISTICS		
1a. Which of the following categories best describes the operational status of the establishment at this location at the end of 1999? Mark (X) only one.	SKIP to Question 2 Temporarily or seasonally inactive Continue with Question 1b	
 During what month and year did this establishment's change in operational status occur? Enter two digit numeric responses Example: January 1999 - 01 1999 	517 1 9 Yr.	
2a. Did your organization offer any of these fringe benefits to its employees at this location in 1999? See Definition Sheet included with this package for explanation of benefits. Mark (X) all that apply.	050	
b. If your organization offered a Flexible benefit plan (Cafeteria Plan), what was the average annual value of the plan, for a TYPICAL EMPLOYEE, at this location?	\$, . 0 0 Flexible benefit plan value	
3. Which one of these categories BEST describes your type of business ownership? Mark (X) only one.	062 1 ☐ S corporation 2 ☐ Corporation 3 ☐ Partnership 4 ☐ Sole proprietorship 5 ☐ Government (Federal, state, or local) 6 ☐ Joint venture or cooperative	
4. Is this a not-for-profit business?	l 063 1	
 Which one of these categories BEST describes the principal business activity at this location? If more than one apply, mark the category which generates the most revenue. Mark (X) only one. 	Retail trade Retail trade	
Approximately how many years has your company been in business? If your organization operates at more than one location, enter the number of years the parent company has been in business.	Approximate number of years in business	
If your organization DID offer health insurance coverage	to its employees in 1999, continue with Page 7, Section E.	

If your organization DID offer health insurance coverage to its employees in 1999, continue with Page 7, Section E If your organization DID NOT offer health insurance coverage to its employees in 1999, SKIP to Page 8, Section F.

	Section E - GENERAL HEALTH	COVERAGE CHARACTERISTICS
<i>availa</i> Estim	blete Section E if your organization made insurance able to its employees at this location in 1999. ates are acceptable. e complete questions 1–3 for this location ONLY. What was the total annual cost of coverage for ALL hospital and/or physician plans offered AT THIS LOCATION in 1999? Include both employer and employee contributions. Include the total cost of coverage for all active employees at the location identified on the cover sheet.	\$, , , , , , , , , , , , , , , , , , ,
2a.	Which of the listed optional coverage services, if any, did your organization offer to its active employees in 1999 at a premium separate from the comprehensive plan premium? Do not include single services covered under a comprehensive health plan. Report on single service insurance plans only. Mark (X) all that apply.	192
b.	What was the total amount paid for optional coverage for all active employees enrolled AT THIS LOCATION in 1999?	\$, , , , , , , , , , , , , , , , O O O Optional coverage cost
За.	For 1999, did your organization impose a waiting period before new employees could be covered by health insurance?	197 1 ☐ Yes – Continue with Question 3b 2 ☐ No – SKIP to Question 4
b.	For 1999, what was the typical waiting period? Mark (X) only one.	198 1 Less than 2 weeks 2 2 2 weeks to less than 1 month 5 Until the first day of the next month 3 1-3 months 4 More than 3 months
4.	Please complete questions 4–9 for ALL locations. In 1999, did your organization provide health insurance to any employees who retired from your organization? If your organization did not have retirees, mark "No."	551 Yes - Continue with Question 5a 2 No 3 Don't know SKIP to Page 8, Section F
5a.	Were retirees under 65 years of age eligible to receive health insurance in 1999?	209 1 Yes 2 No
b.	Were retirees 65 years of age and over eligible to receive health insurance in 1999?	210 1 Yes 2 No
6.	How many RETIREE-ONLY hospital and/or physician plan choices did your organization offer in 1999?	Retiree-only plans OR None
7.	Did your organization offer its retirees at least one portable plan? A portable plan allows the retiree to obtain care in almost all localities within the country.	1 512 1 Yes 2 No

FORM MEPS-10 (5-24-2000) 24

	Section E – GENERAL HEALTH COVER	RAGE (CHARACTERISTICS - Continued
8a.	What was the total number of retirees covered by health insurance through your organization at all of its locations in 1999?	 513 	Retirees covered by insurance
b.	What percentage of these retirees were enrolled in single coverage?	 554 	% Retirees enrolled in single coverage
9a.	For a typical plan in 1999, how much did the EMPLOYER contribute toward the monthly plan premium for ONE TYPICAL retiree with single coverage?	515 	\$, . 0 0 Employer contribution
b.	For this same plan, what was the total monthly premium for this typical retiree with SINGLE coverage?	 514 	\$, . 0 0 Single coverage premium
10a.	For a typical plan in 1999, how much did the EMPLOYER contribute toward the monthly plan premium for ONE TYPICAL retiree with family coverage?	 556 	\$, . 0 0 Employer contribution
b.	For this same plan, what was the total monthly premium for this typical retiree with FAMILY coverage? For retirees, if premiums vary, report for a family of two.	555 	\$. 0 0 Family coverage premium
	Section F - PERSON COMPLE	ETING	THIS QUESTIONNAIRE
*** PLEASE NOTE *** If your organization offered health insurance, please complete Section F and the attached MEPS-10(S), Plan Information Questionnaire for each plan offered. If your organization DID NOT offer health insurance, please complete Section F and END the form.			
²¹² Nam	e (Please print)	²¹³ Title	
Signatu	re	l	214 Date (Month/Day/Year) M M D D Y Y Y Y
²¹⁵ Tele	phone number 220 Extension 216 FAX number		217 E-Mail address

Appendix B. Plan Questionnaire

U.S. DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. CENSUS BUREAU
ACTING AS COLLECTING AGENT FOR
U.S. DEPARTMENT OF
HEALTH AND HUMAN SERVICES
AGENCY FOR HEALTHCARE RESEARCH AND QUALITY

Medical Expenditure Panel Survey Insurance Component

HEALTH INSURANCE COST STUDY PLAN INFORMATION QUESTIONNAIRE

INSTRUCTIONS

The MEPS-10(S), Plan Information Questionnaire, is to be completed for the health insurance plans offered AT THIS LOCATION in 1999. Please respond for the plans indicated in the question 1a box of each MEPS-10(S). If no plan names are preprinted, complete a separate MEPS-10(S) for the 4 largest plans your organization offered. You may use photocopies of this MEPS-10(S) form if sufficient copies were not included in this reporting package.

names are preprinted, complete a separate MEPS-10(S) for the 4 largest plans your organization offered. You may use photocopies of this MEPS-10(S) form if sufficient copies were not included in this reporting package.				
	GENERAL PLAN INFORMATION			
		FOR CENSUS USE ONLY		
	If a plan name is preprinted in the question 1a answer box on the right, answer for the plan specified. Otherwise, complete this Plan Information Questionnaire for the plan with the largest (or next largest) enrollment of active employees.	100		
1a.	For 1999, what was the name of the health insurance plan with the largest (or next largest) enrollment of active employees?	Name of plan		
	 Examples: Blue Cross Blue Shield, High Option Option A Aetna HMO 			
b.	What was the name of the insurance company or carrier providing this plan?	Name of insurance carrier		
	Examples: • Blue Cross Blue Shield • Alliance • Charter Health			
	Enter your company name if self-insured.			
2.	Which type of health care provider was available through this plan? Exclusive providers – Enrollees must go to providers associated with the plan except in an emergency. There is	103 1 Exclusive providers (Examples: Most HMO, IPA, and EPO-type plans) 2 Any providers (Examples: Most conventional and indomnity plans)		
	typically no cost or a small fixed cost for each physician visit.	(Examples: Most conventional and indemnity plans) 3 Mixture of preferred and any providers (Examples: Most PPO and POS-type plans)		
	Any providers – Enrollees may go to providers of their choice on a fee-for-service basis. The plan does not have any associated providers.	 		
	Mixture of preferred and any providers – Enrollees may go to a set of "preferred" providers associated with the plan or providers of their choice. If they go to a non-preferred provider, they face higher costs.			
3.	Did this plan REQUIRE that the enrollee see a primary-care physician in order to be referred to a specialist?	104 1 ☐ Yes 2 ☐ No		
	For plans with multiple options, answer for the "in-network" option.			
4.	Was this plan purchased through a pooling arrangement with other employers such as a multi-employer welfare arrangement (MEWA)?	112 1 ☐ Yes 2 ☐ No		

	GENERAL PLAN INFORMATION - Continued		
5.	Was this plan purchased from an insurance underwriter or was it self-insured?	1 Durchased – SKIP to Page 3, question 7 2 Self-insured – Continue with Question 6a	
	Purchased from an insurance underwriter – (fully-insured) Coverage is purchased from an insurance company or other underwriter who assumes the risk for enrollees' medical expenses.	 	
	Self-insured – Your organization assumes the risk for the enrollees' medical expenses and may charge a premium to employees. This plan may be administered by a third party and may employ supplemental stop-loss insurance to limit unanticipated losses.		
	CELE INCLIDED DI		
		AN INFORMATION	
10	Complete questions 6a–g if this plan was self-insured.	1	
6 а.	Was this plan self-administered or did your organization employ an insurance company or other administrator?	2 Insurance company or other administrator	
b.	Did your organization purchase stop-loss coverage?	1 107 1 Yes 2 No	
0	NATION OF THE PROPERTY OF THE		
С.	What was the ANNUAL COST of this plan for the 1999 plan year for this establishment?	\$, , , , , , , , , , , , , , , , , , ,	
	Include the following: • Claims paid • Administrative costs • The cost of stop-loss coverage (if any)	Annual plan cost	
ما			
u.	What percentage of the amount reported in 6c covered stop loss coverage and administrative costs?	Percentage for stop loss coverage and administrative costs	
e.	What was the monthly premium equivalent for ONE TYPICAL full-time employee with SINGLE coverage?	109 \$. 0 0 Single coverage	
	Estimates are acceptable.	Single coverage	
	Enter the COBRA amount when the premium equivalent is not available.		
f.	What was the monthly premium equivalent for ONE TYPICAL full-time employee with FAMILY coverage?	\$, 0 0 Family coverage	
	Estimates are acceptable.	l	
	Enter the COBRA amount when the premium equivalent is not available.	 - -	
	Family premiums should be calculated for a family of four if cost varies by family size.		
g.	Are the amounts reported in 6e and 6f premium equivalents or COBRA amounts?	1 111 1 Premium equivalents 2 COBRA amounts	
	Mark (X) only one.	Continue with Page 3, question 7.	

28 FORM MEPS-10(S) (4-12-2000)

	PLAN AFI	ILIATION	
7.	Was this plan offered through a union or a trade association? If this plan was offered through a union or trade	113 1 Union — 2 Trade Association — 3 Neither – Continue with Question 8a	
	association, please provide the information requested at the right.	114 Name of union or trade association 115 Local number, if a union	
		116 Name of insurance representative	
		117 Address (Number and street)	
		118 City 119 State 120 ZIP Code	
		121 Telephone number ()	
	ENROL	LMENT	
8a.	Estimates are acceptable for all enrollment figures. Exclude retirees. How many active employees were enrolled in this	125	
ou.	plan at this establishment during a typical pay period? Include full-time, part-time, temporary, and seasonal	Active employees enrolled in plan	
	employees. Exclude former employees, contract workers, and retirees.		
b.	How many of these active employees were enrolled in single coverage during a typical pay period?	Active employees enrolled in single coverage	
C.	How many FORMER employees were enrolled in this plan through COBRA or other state continuation-of-benefits laws during a typical pay period?	Former employees enrolled in plan	
SINGLE COVERAGE PREMIUMS			
9a.	Report for typical situations and enrollees. If premium varies, report for an average employee. Report employer/employee contributions and total premium for the same period. Was single coverage offered under this plan?	⁵⁵² 1 ☐ Yes – Continue with Question 9b 2 ☐ No – SKIP to Page 4 , Qu estion 10a	
b.	For this plan, how much did the employer contribute toward the plan premium of ONE TYPICAL full-time employee with single coverage?	\$, 0 0 Employer contribution	
C.	How much did this typical employee with single coverage contribute toward his/her own premium?	\$, . 0 0 Employee contribution	
d.	What was the total premium for this typical employee with single coverage?	\$. 0 0 Total single premium If this was a self-insured plan, this total should be the same as 6e on Page 2.	
e.	The amounts reported in questions 9b-d are based on which one of the following time periods? Mark (X) only one.	133 1 Weekly 2 Every 2 weeks 3 Monthly 5 Quarterly 4 Yearly	

FAMILY COVERAGE PREMIUMS						
10a.	Report for typical situations and enrollees. If premium varies, report for an average employee. Report employer/employee contributions and total premium for the same period. Report for a family of four if cost varies by family size. Was family coverage offered under this plan?	137	1 ☐ Yes – Continue with question 10b 2 ☐ No – SKIP to question 11a			
b.	For this plan, how much did the employer contribute toward the plan premium of ONE TYPICAL full-time employee with family coverage?	135	\$, . 0 0 Employer contribution			
C.	How much did this typical employee with family coverage contribute toward his/her own premium?	136	\$, . 0 0 Employee contribution			
d.	What was the total premium for this typical employee with family coverage?	134	\$. 0 0 Total family premium If this was a self-insured plan, this total should be the same as 6f on Page 2.			
e.	The amounts reported in questions 10b-d are based on which one of the following time periods? Mark (X) only one.	553	1			
	GENERAL PREMIL	JM IN	FORMATION			
11a.	Did the PREMIUMS charged by the insurance company or carrier vary by any of these characteristics? Mark (X) all that apply.	138 139 140 141 142 099	☐ Age ☐ Sex (Gender) ☐ Number of persons covered by a family plan ☐ Wage or salary levels ☐ Other – Specify ☐ None of the above			
b.	Did the amount an EMPLOYEE CONTRIBUTED toward his/her own coverage vary by different employee categories? Examples: Full-time, part-time, union status, wage or salary levels	143	1 ☐ Yes 2 ☐ No			
12.	Did the plan premium include life and/or disability insurance? Mark (X) all that apply.	144 145 565	☐ Life insurance ☐ Disability insurance ☐ No life and/or disability insurance covered by the premium			

30

FORM MEPS-10(S) (4-12-2000)

	INDIVIDUAL [EDUCTIBLES	
13a.	Did this plan have a deductible? Deductible – Predetermined amount which must be met by an individual before the plan will pay for covered services. Many HMOs do not have a deductible.	1 Yes – Continue with question 13b 2 No – SKIP to Page 6, question 15a	
b.	What was the annual deductible an individual paid? Report deductibles for care received "in-network" from preferred providers, if applicable. Enter physician care and hospital care amounts in appropriate boxes if separate deductibles apply. If deductible is per overnight hospital stay, it is not an annual deductible and should be reported under 15b on Page 6.	\$, . 0 0 Individual annua deductible OR Separate deductibles for: 147 \$, . 0 0 Physician care 148 \$, . 0 0 Hospital care	
	FAMILY DE	DUCTIBLES	
14a.	Did this plan require that a specific number of family members must meet their individual deductibles before the family deductible was met?	1 Yes - Continue with question 14b 2 No - SKIP to question 14c 3 Family coverage not offered - SKIP to Page question 15a	6,
b.	How many family members were required to meet their individual deductibles before the family deductible was met? Report for typical situations and enrollees.	Number of family members	
C.	What was the total annual deductible a family paid? Report for a family of four.	\$, . O O Total annual fam deductible	ily

PAYMENTS						
15a.	Was hospital care covered under this plan?	 155 	1 ☐ Yes – Continue with question 15b 2 ☐ No – SKIP to question 15c			
b.	How much and/or what percentage of the total bill did an enrollee pay out-of-pocket for an inpatient hospital stay after any annual deductible was met?	152 	\$, Amount paid by enrollee for hospital care			
	Some plans may have both a dollar amount and a percentage copayment.	154 	1 ☐ Per day 2 ☐ Per stay			
	Out-of-pocket expense – Those costs paid directly by the enrollee.	 153	AND/OR			
	Report for precertified hospital stays (if applicable). Report the copayment for stays at "in-network"/	 	% Paid by enrollee			
	participating hospitals (if applicable). Do not include any physician charges incurred during the					
	hospital stay.	 				
C.	Was physician care covered under this plan?	218 	1 ☐ Yes – Continue with question 15d 2 ☐ No – SKIP to question 16a			
d.	How much and/or what percentage of the total bill did an enrollee pay out-of-pocket for an office visit after any annual deductible was met?	 156 	\$. 0 0 Amount paid by enrollee for office visit			
	Some plans may have both a dollar amount and a percentage copayment.	l I I 157	AND/OR			
	Out-of-pocket expense – Those costs paid directly by the enrollee.	137 	% Paid by enrollee			
	Report the copayment for an "in-network"/participating general practitioner during normal office hours.	 				
16a.	What was the maximum amount this plan would have paid for an enrollee over his/her lifetime?	l l 159 l	\$, , , , , , , , , , , , , , , , , , ,			
		 	OR No lifetime maximum			
b.	What was the maximum amount this plan would have paid for an enrollee in one year?	l 160 l	\$, , . 0 0			
		 	OR			
		l 221 l	☐ No annual maximum			
17a.	What was the maximum annual out-of-pocket expense for an individual?	161 	\$. 0 0			
	Out-of-pocket expense – Those costs paid directly by the enrollee.	 	OR			
	This is often referred to as a catastrophic limit.	l 163	☐ No individual maximum			
	Include all copayments and deductibles.	 				
b.	What was the maximum annual out-of-pocket expense for a family of four?	162 	\$. 0 0			
		l 222	OR No family maximum			
	3	32	FORM MEPS-10(S) (4-12-2000)			

PLAN CHARACTERISTICS						
18a.	Could this plan have refused to cover persons with certain pre-existing medical or health conditions?	 183 	1 ☐ Yes – Continue with question 18b 2 ☐ No – SKIP to question 19			
b.	Did this happen in 1999?	 184 	1 ☐ Yes 2 ☐ No			
19.	Did this plan have a policy requiring a waiting period before covering pre-existing conditions?	185 	1 ☐ Yes 2 ☐ No			
20.	In what month did the plan year begin? Enter a two-digit numeric response. Example: January = 01; May = 05	123 	Month			
21.	Which of the services listed were covered by this plan?	 	Death	Yes (1)	No (2)	Don't know (3)
		164 	Routine mammograms			
		165 	Adult routine physical exams			
		166 	Routine pap smears			
		l 167	Office visits for prenatal care			
		168 I	Adult immunizations			
		169 I	Child immunizations			
		170	Well-baby care, under 1 year			
		171	Well-child care, 1–4 years	Ш	Ш	
		173	Chiropractic care			
		 174 	Other non-physician providers (such as physical therapists, podiatrists, and midwives)			
		l 175	Outpatient prescriptions			
		l l 176	Routine dental care			
		l l 177	Orthodontic care			
		 178 	Skilled nursing facility (convalescent care)			
		l 179	Home health care			
		l I 180	Inpatient mental illness			
		l I 181	Outpatient mental illness			
		 182 	Alcohol/substance abuse treatment			

*** PLEASE NOTE ***

If your organization offered only one health insurance plan, please end the form.

If your organization offered more than one health insurance plan, please complete a General Plan Information Questionnaire for each plan that was offered, up to four plans.

Appendix C. Definitions of Selected Variables

Firm Size Class 1

```
1 if enterprise employment = 0-5
2 if enterprise employment = 6-24
3 if enterprise employment = 25-99
4 if enterprise employment = 100-999
5 if enterprise employment = 1000 or more
```

Firm Size Class 2

```
1 if enterprise employment = 0-249
2 if enterprise employment = 250 or more
```

Firm Size Class 3

```
1 if enterprise employment = 0-4999
2 if enterprise employment = 5000 or more
```

Establishment Size Class

```
1 if establishment employment = 0-10
2 if establishment employment = 11 or more
```

Industry Division

```
agriculture if two-digit SIC = 01-09 construction if two-digit SIC = 15-17 retail trade if two-digit SIC = 52-59 mining if two-digit SIC = 10-14 finance, insurance and real estate if two-digit SIC = 60-67 wholesale trade if two-digit SIC = 50-51 manufacturing if two-digit SIC = 20-39 transportation, communication and utilities if two-digit SIC = 40-49 services if two-digit SIC = 70-89
```

Industry Division Group

```
1 if industry division = agriculture, construction or retail trade
2 if industry division = manufacturing, transportation, communication, utilities or services
3 if industry division = mining, finance, insurance, real estate or wholesale trade
```

SIC₂

The first two digits of the establishment's six digit Standard Industrial Classification (SIC) Number

Firm Age Group

```
1 if age = 0-16
2 if age = 17 years or more
```

Firm Age Group 2

```
1 if age = 0-4
2 if age = 5-9
3 if age = 10-14
4 if age = 15-19
5 if age = 20 years or more
```

Census Division

```
New England if State = ME, NH, VT, MA, CT, RI
Mid- Atlantic if State = NY, NJ, PA
East North Central if State = OH, IN, IL, MI, WI
West North Central if State = MN, IA, MO, ND, SD, NE, KS
South Atlantic if State = DE, MD, DC, VA, WV, NC, SC, GA, FL
East South Central if State = KY, TN, AL, MS
West South Central if State = AR, LA, OK, TX
Mountain if State = MT, ID, WY, CO, NM, AZ, UT, NV
Pacific if State = WA, OR, CA, AK, HI
```

SIC 2

The first two digits of the 6 digit SIC code.